California Regional Water Quality Control Board North Coast Region

ORDER NO. 89-100 AMENDING ORDER NO. 89-83 I.D. NO. 1A770020DN

WASTE DISCHARGE REQUIREMENTS

FOR

COUNTY OF DEL NORTE CRESCENT CITY SOLID WASTE DISPOSAL SITE CLASS III WASTE MANAGEMENT UNIT

Del Norte County

The California Regional Water Quality Control Board, North Coast Region (hereinafter the Regional Board), finds that:

- 1. The County of Del Norte (hereinafter the discharger) owns and operates the Crescent City solid waste disposal site located near the end of Old Mill Road approximately two miles north of Crescent City, California in the E 1/2 of Section 7, T16N, RIW, HB&M as shown in Attachments "A" and "B", incorporated herein and made part of this Order.
- 2. The Regional Board adopted Order No. 89-83, Waste Discharge Requirements for the Crescent City Solid Waste Disposal Site on June 22, 1989. Order No. 89-83 establishes discharge prohibitions, discharge specifications and construction specifications for operation and maintenance of the site. The Order also finds that hydrogeologic conditions at the site do not conform to Subchapter 15 siting criteria for a Class III solid waste disposal site (suitable for general municipal solid waste). Consequently, on June 22, 1989, the Regional Board adopted Cease and Desist Order No. 89-84, requiring selection of a suitable replacement site by June 15, 1991.
- 3. Factors considered in determining that the site does not conform to Subchapter 15 siting criteria include:
 - a. Shallow groundwater underlying the site
 - b. Permeable sand dunes underlying the site.
 - c. Permeable sand used for waste cover material.
 - d. High average annual rainfall of 65 inches.
 - e. Large volume of both municipal solid waste and liquid wastes.
 - f. Important existing and potential beneficial uses of surface water and groundwater, including domestic water supply and wildlife habitat.
- 4. Because final closure of the disposal site may not occur until 1994, it is desirable to minimize groundwater quality degradation in the vicinity by accelerating closure operations on portions of the site as they are brought up to final grade. Closure includes construction of a low-permeability, clay cap over the wastes to minimize rainfall infiltration, leachate generation and water quality degradation.

- 5. The Regional Board action to amend waste discharge requirements for the facility is exempt from provisions of CEQA in accordance with Section 15301, Title 14, California Code of Regulations. The Regional Board finds that adverse water quality impacts will be minimized if the discharger complies with the terms of this Order.
- 6. The Regional Board has notified the discharger and interested agencies and persons of its intent to amend waste discharge requirements for this discharge and has provided them with an opportunity for a public meeting and an opportunity to submit their written views and recommendations.
- 7. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

THEREFORE, IT IS HEREBY ORDERED that pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, Order No. 89-83 be amended as follows:

B. DISCHARGE SPECIFICATIONS

- 7. Waste disposal cells shall be designed and constructed to progress in an orderly and timely manner toward final landfill contours. Final contours of the landfill shall be constructed as shown in technical reports contained in the Report of Waste Discharge. Annually, prior to October 1, the previous year's fill cells shall be brought to final grade and capped with at least one foot of interim cover material consisting of onsite sandy soils.
- 8. Investigate potential sources of clay and vegetative cover material and submit report, by April 1, 1990, delineating the proposed source(s). Commending in 1991 and annually thereafter, the previous year's fill cells shall be provided with final cover by October 1st. Final cover shall conform to criteria as specified in Construction Specifications contained in this Order.

Certification

I, Benjamin D. Kor, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, North Coast Region, on August 24, 1989.

CHIGNAL SIGNED BY

Benjamin D. Kor Executive Officer

California Regional Water Quality Control Board North Coast Region

ORDER NO. 89-83 I.D. NO. 1A770020DN

WASTE DISCHARGE REQUIREMENTS

FOR

COUNTY OF DEL NORTE
CRESCENT CITY SOLID WASTE DISPOSAL SITE
CLASS III WASTE MANAGEMENT UNIT

Del Norte County

The California Regional Water Quality Control Board, North Coast Region (hereinafter the Regional Board), finds that:

- 1. The County of Del Norte (hereinafter the discharger) owns and operates the Crescent City solid waste disposal site located located near the end of Old Mill Road approximately two miles north of Crescent City, California in the E 1/2 of Section 7, T16N, R1W, HB&M as shown in Attachments "A" and "B", incorporated herein and made a part of this Order.
- 2. In response to a Report of Waste Discharge filed on October 3, 1972, the Regional Board adopted Order No. 72-70, Waste Discharge Requirements for the Crescent City Solid Waste Disposal Site on October 25, 1972. Order No. 72-70 was revised on October 25, 1973 and again on January 27, 1977. Order No. 77-2 currently regulates waste discharges at the disposal site. The site is classified as a Class II-2 disposal site (suitable for general municipal solid waste) under the Subchapter 15 regulations prevailing at that time.
- 3. The site consists of a 159-acre parcel of land owned by the County of Del Norte. The October 3, 1972 Report of Waste Discharge estimated total site capacity at 25,000 cubic yards for filling of a six-acre start-up area with expansion planned in the future. The landfill now covers approximately twenty-five acres to an average depth of thirty feet. This represents a waste volume of 1,000,000 cubic yards.
- 4. The site receives approximately 40 tons per day of nonhazardous municipal solid waste from commercial haulers and from the general public. Each ton of incoming solid waste occupies approximately two cubic yards of compacted landfill space. The site also receives nonhazardous nonmunicipal solid waste consisting of septage, digested sludge from the Crescent City wastewater treatment facility, cheese whey, and seafood processing wastes.

- Fursuant to the Calderon Bill (AB 3525, 1984) a Sciid Waste Assessment Test (SWAT) report was prepared by the discharger to evaluate site water quality and provide an indication whether nazardous wastes are leaking from the waste management unit. The SWAT report, which was submitted to the Regional Board on November 1, 1988, provided an adequate description of groundwater quality in the vicinity of the site, but it did not include sampling of leachate or rainfall runoff due to the relatively dry rainfall year. The County currently is preparing an addendum to the SWAT report that will include results of leachate and surface water runoff monitoring. Results of groundwater quality monitoring reveal that groundwater in the immediate site vicinity has been degraded through increased mineralization and low-level volatile organic compounds. None of the samples from domestic wells 800 feet away from the site indicate that groundwater has been degraded at that location.
- 6. Information contained in the SWAT report, discharger monitoring reports since 1974, and results of staff inspections indicate that hydrogeologic conditions at the site do not conform to revised Subchapter 15 siting criteria for a Class III solid waste disposal site. The following factors were considered in determining that the site does not conform to Subchapter 15 siting criteria:
 - a. Shallow groundwater underlying the site
 - b. Permeable sand dunes underlying the site
 - c. Permeable sand used for waste cover material
 - d. High average annual rainfall of 65 inches
 - e. Large volume of both municipal solid waste and liquid wastes
 - f. Important existing and potential beneficial uses of surface water and groundwater, including domestic water supply and wildlife habitat
- 7. The discharger has evaluated alternatives for long-term solid waste disposal in the County and has decided to close the Crescent City solid waste disposal site as soon as a new landfill can be acquired and developed. The estimated closure date for this site is September, 1993. An interim operational plan was submitted in December, 1988. It is appropriate for the Regional Board to prescribe updated waste discharge requirements for interim operation of the landfill.
- 8. Surface water in the vicinity of the site occurs as rainfall runoff and surface discharge of infiltrated rainfall from sand dunes into interdune depressions. Overflow from a large pond in the northerly portion of the site drains through the central portion of the site to a marsh and wetland along the south and east side of the site. Surface water from the site vicinity ultimately discharges into Lake Earl to the north.
- 9. The site is not located within a 100-year floodplain. Tributary site drainage is contained in a culvert to minimize contact with wastes.

- 10. The site is not located near a known Holocene fault, and no evidence of surface fault rupture or displaced strata was observed within 3,000 feet of the site. The facility appears to be designed, constructed, and maintained to preclude failure due to expected earthquake acceleration.
- 11. Land within 1,000 feet of the site is used for rural residential and State park open space for recreation and wildlife habitat.
- 12. Beneficial uses of areal groundwater include:
 - a. domestic water supply
 - b. agricultural water supply
 - . surface water recharge
- 13. Beneficial uses of Lake Earl and its tributaries include:
 - a. water contact recreation
 - b. non-contact water recreation
 - c. warm freshwater habitat
 - d. wildlife habitat
 - e. saline water habitat
 - f. fish migration
- 14. The Regional Board adopted the Water Quality Control Plan for the Klamath River Basin (1A) and North Coastal Basin (1B) on March 20, 1975. The Klamath River Basin Plan (1A) was combined with the North Coastal Basin Plan (1B) to form the Water Quality Control Plan for the North Coast Region. The Plan for the North Coast Region was adopted by the Board on April 28, 1988 and approved by the State Water Resources Control Board on November 15, 1988. The Plan references Subchapter 15, Chapter 3, Title 23, California Code of Regulations which was revised and updated on December 8, 1984. Subchapter 15 provides the regulations governing discharge of waste to land.
- 15. The Crescent City solid waste disposal site was an existing project prior to enactment of the California Environmental Quality Act (CEQA) and was exempt from CEQA. No environmental assessment has been completed pursuant to provisions of CEQA. The Regional Board action to revise waste discharge requirements for the facility is exempt from provisions of CEQA in accordance with Section 15301, Title 14, California Code of Regulations. The Regional Board finds that adverse water quality impacts will be minimized if the discharger complies with the terms of this Order.
- 16. The Regional Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public meeting and an opportunity to submit their written views and recommendations.

17. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

THEREFORE, IT IS HEREBY ORDERED that pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, Order No. 77-2 be rescinded and the discharger shall comply with the following:

A. DISCHARGE PROHIBITIONS

- 1. The discharge of hazardous wastes and designated wastes as defined in Sections 2521 and 2522 of Subchapter 15 is prohibited except as follows:
 - a. Leachate generated and collected at the site is defined as a designated waste and shall be managed at the site in conformance with Discharge Specifications contained in this Order.
 - b. Wastes containing greater than one percent friable asbestos are defined as hazardous wastes in Title 22 of the California Code of Regulations; however, because these wastes do not pose a threat to groundwater quality, they may be discharged at this site if handled in conformance with Section 25143.7 of the California Health and Safety Code.
- 2. The discharge of liquid wastes or solid wastes containing free liquids, except dewatered sewage or water treatment sludge as provided in Section 2523(c) of Subchapter 15, into solid waste disposal cells is prohibited. Liquid wastes and solid wastes containing free liquids may be discharged to separate ponding or spreading areas or under special circumstances only if the specific wastes, manner and place of disposal are approved by the Executive Officer. Liquids used during disposal operations shall be limited to a minimal amount reasonably necessary for dust control, compaction and fire control purposes. Leachate disposal applications shall be in conformance with Discharge Specifications contained in this Order.
- 3. The discharge of municipal solid waste outside of the disposal area boundary shown on Attachment "B" is prohibited. Nonmunicipal solid waste as described in Finding No. 4 may continue to be deposited into existing, separate disposal areas until the discharge prohibition dates set forth in Discharge Prohibition A.10 and A.11.
- 4. The discharge of wastes, including leachate, to surface waters, surface water drainage systems or groundwater is prohibited.
- 5. The discharge of wastes within five feet of the highest anticipated elevation of the groundwater surface is prohibited.
- 6. The discharge of wastes into ponded water is prohibited.
- 7. Ponding of liquids, including rainfall runoff and leachate, over solid waste disposal cells is prohibited.

- 8. Leachate discharges to land which is not controlled by the discharger are prohibited.
- 9. The treatment, storage, or disposal of waste, including leachate, shall not cause a pollution or nuisance as defined in Section 13050 of the California Water Code.
- 10. The discharge of cheese whey is prohibited after September 1, 1990 except for short periods as necessary to provide for disposal during a breakdown of whey drying equipment.
- 11. The discharge of septage and sewage sludge is prohibited after September 1, 1991.

B. DISCHARGE SPECIFICATIONS

- 1. Leachate collection and removal systems shall be operated so as to minimize the buildup of leachate in the landfill and ensure that wastes in the landfill are not saturated. Automatic pumping systems shall be installed in each leachate collection gallery in order to provide for timely removal of leachate.
- 2. Leachate removed from the landfill shall be discharged into above-ground, structurally-sound storage tanks. Storage tanks shall have a berm or other revetment of adequate size and integrity to contain the largest potential accidental discharge of leachate.
- 3. Leachate removed from the landfill shall not be discharged into the landfill or below ground surface. Leachate may be spray irrigated on inactive disposal cells or for dust control on roads during summer months. Spray irrigation shall be in a manner that will promote evaporation and will not result in saturated soil conditions, ponding or surface runoff. Leachate spray irrigation systems and disposal areas shall be approved by the Executive Officer. Leachate shall be discharged off site during winter months in a manner approved by the Executive Officer.
- 4. Wastes discharged at this site shall be provided with interim cover material. Only the active face of the disposal cell shall be left exposed to rainfall. The active face shall not be excessively large for daily waste placement. All inactive areas shall be capped with at least one foot of clean, earthen material compacted and graded to drain away from the active area. Inactive area shall be defined as a disposal cell that will not be receiving wastes within the next 48 hour period.
- 5. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes discharged at this site. Drainage ditches shall be located, to the maximum extent practicable, such that they do not cross over landfill areas. Site drainage over landfill areas shall be contained in man-made drainage conveyance structures such as corrugated metal pipe or in drainage ditches which are lined with at least one foot of compacted soil having an in-place permeability of 10-6 cm/sec or less.

- 6. Annually, prior to October 1, any necessary erosion control measures shall be implemented and any necessary construction, maintenance or repairs of drainage control facilities shall be completed to prevent erosion or flooding of the site.
- 7. Waste disposal cells shall be designed and constructed to progress in an orderly and timely manner toward final landfill contours. Final contours of the landfill shall be constructed as shown in technical reports contained in the Report of Waste Discharge.
- 8. After Regional Board approval of the site closure and post-closure maintenance plan, waste disposal areas reaching final grade shall be provided with final cover within two years of cell completion. Final cover shall conform to criteria as specified in Construction Specifications contained in this Order. Timing of final cover application may be delayed with written approval of the Executive Officer if the rate of cell settlement is of such magnitude as to require excessive final cover maintenance. The discharger shall install a sufficient number of permanent surveyed monuments on and near the landfill from which the elevation of disposal cells can be determined. Such monuments shall be installed by a licensed land surveyor or registered civil engineer.
- 9. All wastes that are windblown, carried in surface runoff or otherwise removed from the active area shall be collected regularly and discharged back into the active area.

C. CONSTRUCTION SPECIFICATIONS

- 1. Precipitation and drainage control systems shall be designed and constructed to protect the disposal area from any washout, erosion of wastes or cover material, and from inundation which could occur from surface runoff under 100-year, 24-hour precipitation conditions.
- 2. All containment structures and erosion and drainage control systems shall be designed and constructed under the direct supervision of a registered civil engineer or a certified engineering geologist and shall be certified by the individual as meeting the prescriptive standards and performance goals of Subchapter 15.
- 3. Materials used to construct liners shall have appropriate physical and chemical properties to ensure containment of wastes over the operating life, closure and post-closure maintenance period of the landfill.
- 4. Clay liners and clay caps (used in final covers) shall be sloped to promote rapid lateral drainage and shall have a minimum thickness of one foot, a maximum permeability of 1x10-6 cm/sec and a minimum relative compaction of 90 percent. In-place permeabilities of liners and caps shall be determined in the field using techniques approved by the Executive Officer. Construction methods and quality assurance procedures shall be sufficient to ensure that all parts of the liners and caps meet the permeability and compaction requirements.

- 5. Leachate collection and removal systems installed directly over clay liners shall be designed and operated to prevent the accumulation of one foot or more of hydraulic head on the liner at any time. Leachate collection sumps shall be designed and operated to keep leachate levels at the minimum needed to ensure efficient pump operation.
- 6. Materials used to construct leachate collection and removal systems shall have appropriate physical and chemical properties to ensure the required transmission of leachate through the systems over the operating life, closure and post-closure maintenance period of the landfill. Materials shall have sufficient strength and thickness to prevent collapse under the pressure exerted by overlying wastes, waste cover materials and equipment used on the landfill.
- 7. Landfill gas venting and removal systems shall be designed such that they do not allow leachate to flow out of a lined disposal cell through the cell liner.
- 8. Final cover material to be placed over the landfill shall be designed and constructed to function with minimum maintenance and shall consist, at a minimum, of a two-foot thick foundation layer, overlain by a one-foot thick clay cap, which is overlain by a one-foot vegetative soil layer. The foundation and vegetative soil layers shall be comprised of clean onsite soils and shall be compact to a relative compaction of 90 percent. Clay caps shall be constructed as described in Construction Specification C.4. above.
- 9. Vegetation shall be established immediately upon final closure of a disposal cell. Vegetation shall be selected to require a minimum of irrigation and maintenance and shall have a rooting depth not in excess of the vegetative soil layer thickness.
- 10. Installation of the final cover shall be under the direct supervision of a registered civil engineer or a certified engineering geologist. Permeability testing and quality assurance procedures shall be conducted as described in Construction Specification C.1. above.

D. PROVISIONS

- 1. The discharger shall prepare a plan pursuant to Section 2523(b)(2) of Subchapter 15, for periodic load-checking to ensure that hazardous materials are not discharged to the site. The plan shall be submitted to the Regional Board by April 1, 1990.
- 2. The discharger shall submit to the Regional Board by April 1, 1990, a site closure and post-closure maintenance plan describing the methods and controls to be used to assure protection of the quality of surface and groundwaters of the area during final operations and during any proposed subsequent use of the land. The plan must include:
 - a. An estimate of closure and post-closure maintenance costs.
 - b. A proposal for a trust fund or equivalent financial arrangement to provide sufficient funding for closure and post-closure maintenance.

c. The amount to be deposited in the trust fund or equivalent financial arrangement each year.

This plan shall be prepared by or under the supervision of a California registered civil engineer or certified engineering geologist, updated annually, and submitted to the Regional Board by the 15th day of January of each year. The method used to close each waste management unit at the facility and maintain protection of the quality of surface and groundwaters shall comply with waste discharge requirements established by the Regional Board and the most current version of the closure and post-closure maintenance plan which has been approved by the Regional Board. The final report shall be submitted at least 180 days prior to final closure of the facility.

- 3. The discharger shall notify the Regional Board of changes in information submitted under this subchapter, including any material change in the types, quantities, concentrations, or location (boundaries or contours) of wastes discharged; site operations and features; or proposed closure procedures, including changes in cost estimates. The discharger shall notify the Regional Board a reasonable time before the changes are made or become effective. No changes shall be made without Regional Board approval.
- 4. The discharger shall notify the Regional Board in writing of any proposed change of ownership or responsibility for construction, operation, closure or post-closure maintenance of the landfill. This notification shall be given prior to the effective date of the change and shall include a statement by the new discharger that construction, operation, closure, and post-closure maintenance will be in compliance with any existing waste discharge requirements and any revisions thereof. The Regional Board shall amend the existing waste discharge requirements to name the new discharger.
- 5. The Regional Board shall be notified immediately of any slope failure occurring in the landfill area. Any failure which threatens the integrity of containment features or the disposal site shall be corrected promptly after approval of the method and schedule by the Regional Board.
- 6. The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed by the discharger to achieve compliance with the waste discharge requirements.
- 7. This Order is subject to Regional Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Regional Board's Basin Plan; or changes in the discharge characteristics, in three year increments from the effective date of this Order.
- 8. After notice and opportunity for hearing, this Order may be terminated or modified for cause, including but not limited to:
 - a. Violation of any term or condition of this Order.

- b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts.
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- 9. The discharger shall permit the Regional Board:
 - a. Entry upon premises in which an effluent source is located or in which any required records are kept.
 - b. Access to copy any records required to be kept under terms and conditions of this Order.
 - c. Inspection of monitoring equipment or records.
 - d. Sampling of any discharge.
- 10. The discharger shall remove and relocate any wastes discharged at this site in violation of this Order.
- 11. In the event the discharger is unable to comply with any of the conditions of this Order due to:
 - a. Breakdown of waste treatment equipment;
 - b. Accident caused by human error or negligence; or
 - c. Other causes, such as acts of nature;

the discharger shall notify the Executive Officer by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within two weeks of the telephone notification. The written notification shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to correct the problem and the dates thereof, and what steps are being taken to prevent the problem from recurring.

- 12. The discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.
- 13. The discharger shall comply with all provisions of Subchapter 15 that are not specifically referred to in this Order.
- 14. The discharger shall comply with all notice and reporting requirements of the State Department of Water Resources with regard to the construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or with Monitoring and Reporting Program No. 89-83 as required by Section 13750 through 13755 of the California Water Code.
- 15. The Regional Board considers the property owner to have a continuing responsibility for correcting any problems which may arise in the future as a result of this waste discharge or water applied to this property during subsequent use of the land for other purposes.
- 16. The discharger shall comply with Monitoring and Reporting Program No. 89-83, the General Monitoring and Reporting Provisions, and the Contingency Planning and Notification Requirements Order No. 74-151 and any modifications to these documents as specified by the Executive Officer. Such documents are attached to this Order and incorporated herein.

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Cartification

FOR

I, Senjamin D. Kor, Executive Officer, do hereby certify that the Feregoing Us a Pull prime and S. I. SITE correct copy of an Order adopted by the California Regional Water Quality Control Board, North Coast Region, on June 22, 1989.

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CROST CONTRACTOR

The following countwater menitoring wells have been Installed to menitor countwater quality at the disposal size (See Figure ())

Well #3% - Constructed in the Bettery "prostical"

kell #60 - Constructed in the Eaftery formation.

Well 44 * Constructed within the Marst and St. George formations.

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Well 11 + Corntracted in the sand days acquirer.

Woll #2- Constructed in the send dune equifor.

well (35 - Constructed in the went done equiler.

Well #68 - Constructed in the sond dire formation.

North well; South well: West well Dike well

Il the above described wells and an additional velis test may be installed because the best with discharger soull be monitored as follows:

a. On a quarterly basis during Januar, speil, Jily and October, a representative sample of the inflactor formation water sample shall be collected from all wells. Prior to sampling the bare hole shall be properly purged. Purely provided and field sampling logs including equilibrium measurement. The inflact rate and other appurtenent information shall be submitted. Samples whell be analyzed for the following constituents.

California Regional Water Quality Control scard North Coast Region

MONITORING AND REPORTING PROGRAM NO. 89-83

FOR

COUNTY OF DEL NORTE CRESCENT CITY SOLID WASTE DISPOSAL SITE

Del Norte County

WASTE DISCHARGE MONITORING

Quarterly volumes or weights of municipal solid waste that is discharged at the site shall be reported to the Regional Board. Types, quantities and volumes of special wastes shall be recorded separately and reported to the Regional Board. Special waste is considered to be any waste not normally associated with municipal solid waste.

GROUNDWATER MONITORING

The following groundwater monitoring wells have been installed to monitor groundwater quality at the disposal site (See Figure 1):

Well #3N - Constructed in the Battery formation.

Well #6W - Constructed in the Battery formation.

Well #4 - Constructed within the Marsh and St. George formations.

Well #1 - Constructed in the sand dune aquifer.

Well #2- Constructed in the sand dune aquifer.

Well #3S - Constructed in the sand dune aquifer.

Well #6E - Constructed in the sand dune formation.

North well; South well; West well; Dike well.

All the above described wells and any additional wells that may be installed subsequently by the discharger shall be monitored as follows:

a. On a quarterly basis during January, April, July and October, a representative sample of the inflowing formation water sample shall be collected from all wells. Prior to sampling, the bore hole shall be properly purged. Purging protocol and field sampling logs including equilibrium measurements, pumping rate and other appurtenant information shall be submitted. Samples shall be analyzed for the following constituents:

Chemical Oxygen Demand Specific Conductance Total Dissolved Solids Chloride Fluoride Bicarbonate Alkalinity Carbonate Alkalinity Hydroxide Alkalinity

pH
Hardness
Nitrate
Sulfate
Potassium
Calcium
Sodium
Magnesium

b. Annually during April additional samples shall be collected from all wells for the following constituents:

Halogenated and aromatic volatile organics (EPA 601 and 602 methodology)¹. Specify that all peaks must be reported.

Acetone

Heavy Metals by ICAP analysis

- 1 EPA Method 624 may be substituted for Methods 601 and 602.
- c. Additionally, during the October sampling, the south, west and dike wells shall be sampled for EPA metals, EPA 601/602 compounds and acetone. All peaks must be reported and identified.

WATER LEVEL MONITORING

Static water levels shall be recorded monthly. Reference elevation, elevation of screened interval, depth to groundwater and water table elevation shall be reported in a tabular form. Gradient contours, plotted on scaled maps, shall be developed for each month's measurement. Well Nos. 1-7 shall be monitored for static water levels. Data from wells #3 North, #6 West and #4 should not be included in the contour map.

SURFACE WATER MONITORING

Representative grab samples of surface water and/or rainfall runoff shall be collected during January and April of each year from the following locations (shown as "S" on Figure 1):

S-1 = North Pond

S-2 = Outlet of Beaver Pond.

S-4 = Marsh outlet at Old Mill Road.

Surface water monitoring samples shall be collected immediately following rainfall events and need not be collected at the same time that groundwater monitoring samples are collected. Surface water monitoring samples shall be analyzed for the same general mineral constituents listed in Groundwater Monitoring above.

LEACHATE MONITORING

Representative grab samples of leachate shall be collected on a quarterly frequency in January, April, July and October from the following locations (shown as "L-1" on Figure 1):

L-1 = Western edge of active fill.

Leachate monitoring samples shall be analyzed quarterly for general mineral constituents listed in Groundwater Monitoring section above. Annually during April, samples shall be analyzed for organic and metal constituents listed in Groundwater Monitoring section above in addition to the general mineral constituents.

If a leachate monitoring station has insufficient quantity of liquid to collect a sample, a statement to that effect may be submitted in lieu of data for that particular surface water sample.

Once per month the discharger shall observe the fill areas to determine if leachate seeps have developed. If leachate is observed, a representative grab sample will be taken. The sample shall be analyzed for Specific Conductance, Total Dissolved Solids, Chemical Oxygen Demand, Hardness, pH and Chloride. Flow rates, total volume and disposal methods for each seep shall be recorded. If leachate is not observed, it shall be noted in the quarterly reports which will be submitted to this office.

SAMPLING METHODOLOGY

Analyses shall be performed by a laboratory approved by the State Department of Health Services. Prior to sampling the discharger shall submit for Board approval a sampling plan to include:

- 1. Well purging procedures and calculation of bore hole volumes.
- 2. Sampling procedures, including field sampling logs.
- 3. Handling and transportation procedures.
- 4. Field and laboratory QA/QC procedures, including trip and field blanks.

MONITORING RECORDS

Monitoring records shall be maintained by the discharger and shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample:

Identity of sample and sample station number.

Date and time of sampling and person collecting sample.

Name of person or firm performing sample analysis.

Results of analysis and detection limits for each analysis.

REPORTING

Quarterly monitoring reports shall be submitted by the 30th day of January, April, July and October of each year. Monitoring reports shall contain information collected during the previous quarter. Monitoring reports shall contain any information from monitoring performed more frequently than required or at locations not required by this monitoring and reporting program.

The monitoring data shall be arranged in the reports in tabular form so that the date, constituents, and concentrations are readily discernible. The monitoring and any necessary narrative reports shall be transmitted in accordance with specifications of Resolution No. 71-5, adopted by the Regional Board on February 3, 1971.

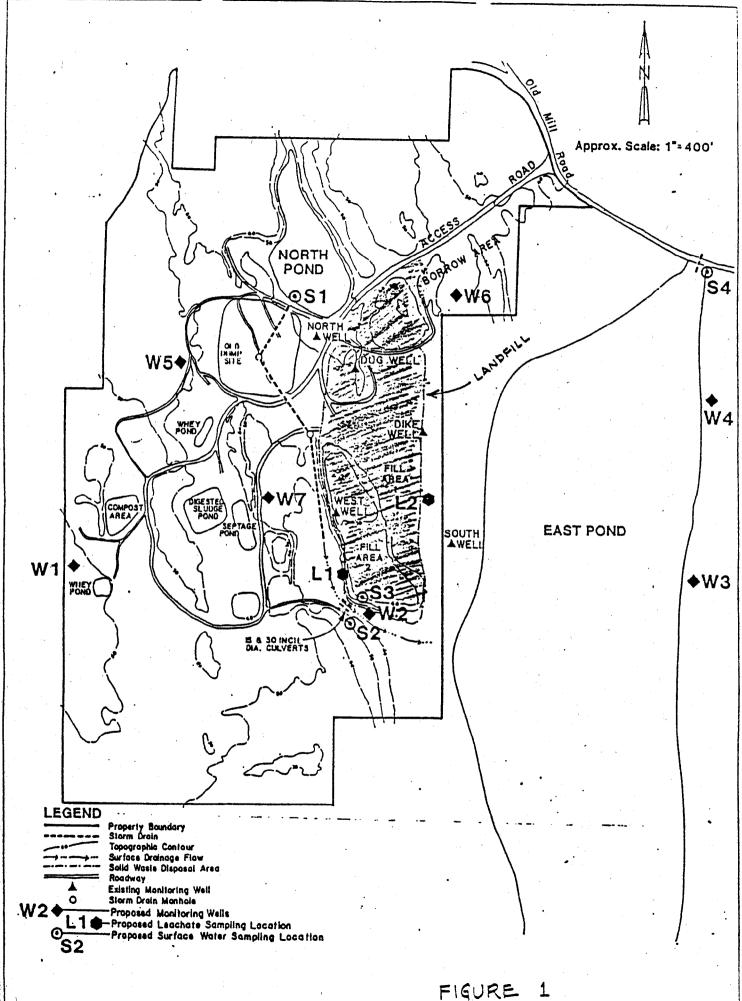
The discharger shall implement the above monitoring program on the effective date of this Order.

ORIGINAL SIGNED &

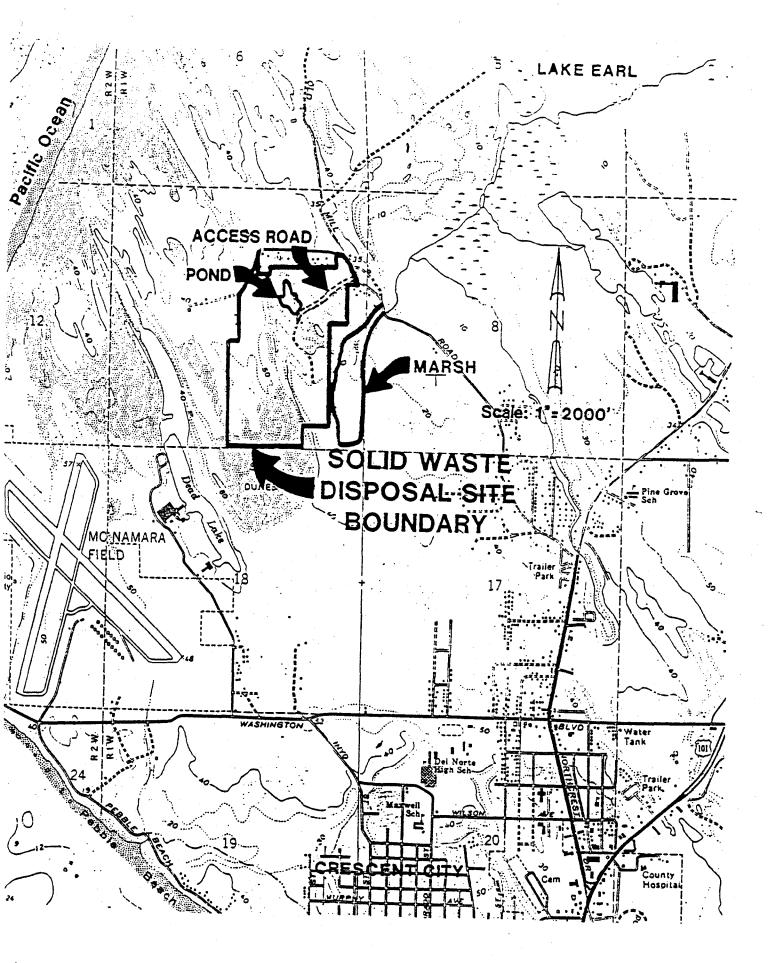
Ordered by_

Benjamin D. Kor Executive Officer

June 22, 1989



CRESCENT CITY SWOS



ATTACHMENT "A"
CRESCENT CITY SWDS

